

## WHAT IS CLAIMED IS:

1 ~~946~~ 1. An optical element comprising  
2 ~~A4~~ a base member; and  
3 a resin layer formed on the surface of the base member and  
4 comprising a cured product of a photosensitive resin composition,  
5 wherein said resin layer has a refractive index of 1.55 or more.

1 2. An optical element comprising  
2 a base member; and  
3 a resin layer formed on the surface of the base member and  
4 comprising a cured product of a photosensitive resin composition,  
5 wherein said resin layer has a visible-light inner transmittance of  
6 95% or more in a 100  $\mu$ m thick area.

1 3. An optical element comprising  
2 a base member; and  
3 a resin layer formed on the surface of the base member and  
4 comprising a cured product of a photosensitive resin composition,  
5 wherein said resin layer has a rate of hygroscopic dimensional  
6 change of 0.4% or less.

1           4. An optical element comprising  
2           a base member; and  
3           a resin layer formed on the surface of the base member and  
4           comprising a cured product of a photosensitive resin composition,  
5           wherein said resin layer has a durometer hardness of HDD 70 or  
6           more.

1 *Sub 75* 5. An optical element comprising  
2 *As* a base member; and  
3           a resin layer formed on the surface of the base member and  
4           comprising a cured product of a photosensitive resin composition,  
5           wherein said resin layer has a gel percentage of 95% or more.

1           6. An optical element comprising  
2           a base member; and  
3           a resin layer formed on the surface of the base member and  
4           comprising a cured product of a photosensitive resin composition,  
5           wherein said resin layer has a glass transition temperature of 95°C or  
6           above.

1 *Sub 76* 7. An optical element comprising  
2 *As* a base member; and  
3           a resin layer formed on the surface of the base member and  
4           comprising a cured product of a photosensitive resin composition,

5 wherein said photosensitive resin composition has a rate of shrinkage  
6 on curing of 7% or less.

1 8. The optical element according to any one of claims 1 to 7,  
2 wherein said resin composition comprises:

- 3 (A) a polyfunctional (meth)acrylate;  
4 (B) a polyfunctional urethane-modified (meth)acrylate; and  
5 (C) a photopolymerization initiator.

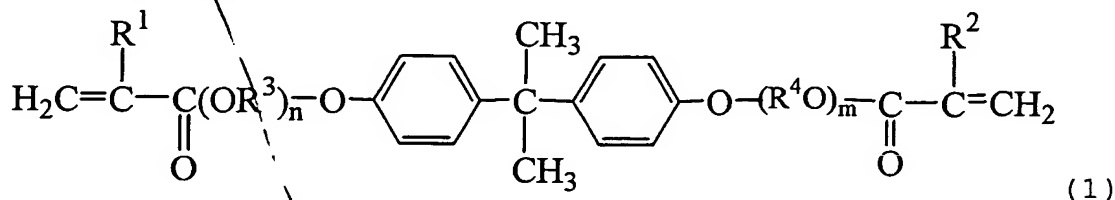
1 9. The optical element according to any one of claims 1 to 8,  
2 wherein said resin composition has a refractive index before  
3 polymerization curing of, 1.52 or more.

1 10. The optical element according to claim 8, wherein said  
2 polyfunctional (meth)acrylate has a refractive index before  
3 polymerization curing, of 1.53 or more.

1 11. The optical element according to any one of claims 8 to 10,  
2 wherein said polyfunctional (meth)acrylate has two or more benzene  
3 ring structures in one molecule.

1 12. The optical element according to any one of claims 8 to 11,  
2 wherein said resin composition comprising, as at least a part of said  
3 polyfunctional (meth)acrylate, a di(meth)acrylate represented by the

4 following Formula (1):

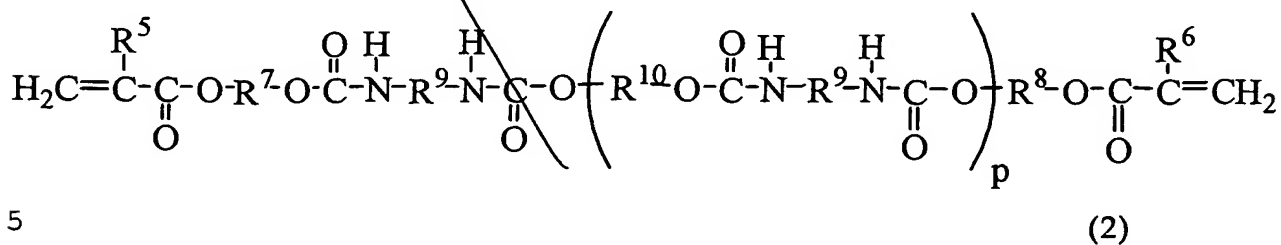


5  
6 wherein R<sup>1</sup> and R<sup>2</sup> are each a hydrogen atom or a methyl group, R<sup>3</sup>  
7 and R<sup>4</sup> are each a hydrocarbon group having 2 to 4 carbon atoms, and  
8 m and n are each an integer of 1 or more.

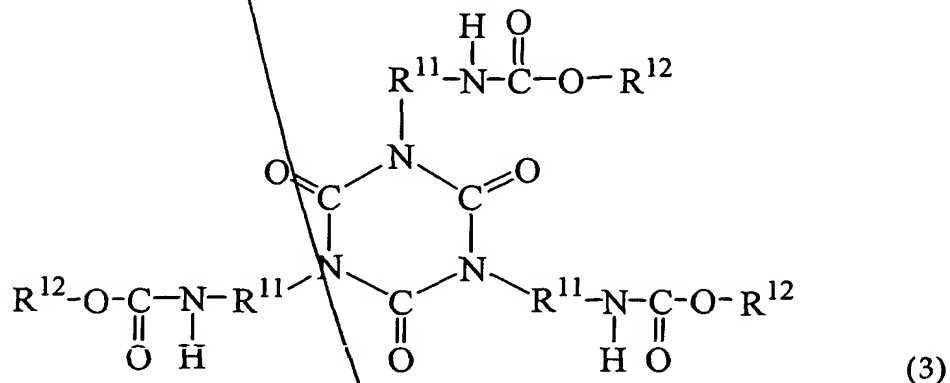
1 13. The optical element according to any one of claims 8 to 12,  
2 wherein said polyfunctional (meth)acrylate has a molecular weight  
3 before polymerization curing, of 1,000 or less.

1 14. The optical element according to claim 8, wherein said  
2 polyfunctional urethane-modified (meth)acrylate has a refractive  
3 index before polymerization curing, of 1.48 or more.

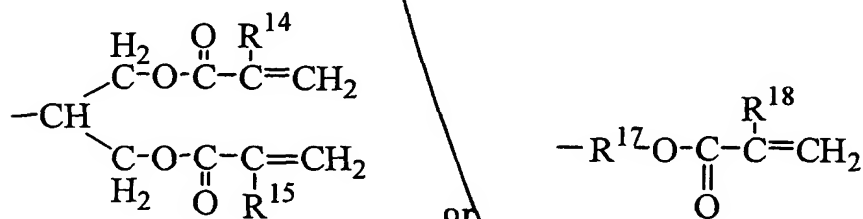
1 15. The optical element according to any one of claims 8 to 14,  
2 wherein said polyfunctional urethane-modified (meth)acrylate  
3 contains at least one of compounds represented by any of the  
4 following Formulas (2) to (4):



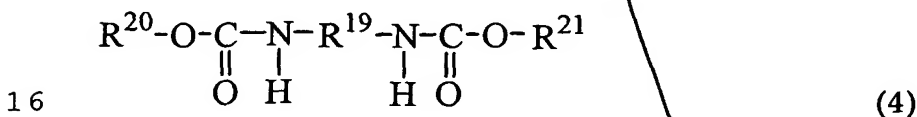
6 wherein R<sup>5</sup> and R<sup>6</sup> are each a hydrogen atom or a methyl group, R<sup>7</sup>  
 7 and R<sup>8</sup> are each a hydrocarbon group having 1 to 10 carbon atoms, R<sup>9</sup>  
 8 is an isocyanate residual group, R<sup>10</sup> is a polyol residual group or a  
 9 polyester residual group, and p is 0 or an integer of 10 or less.



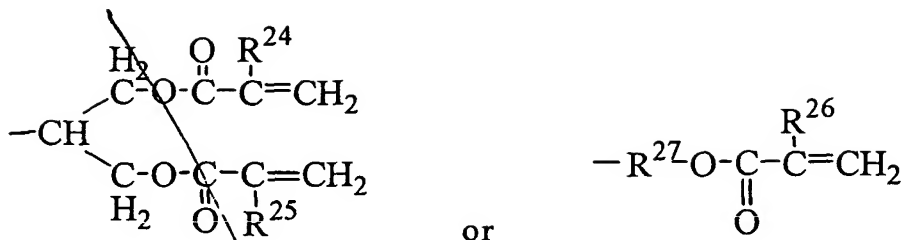
10 wherein R<sup>11</sup> is a hydrocarbon group having 1 to 10 carbon atoms, and  
 11  
 12 R<sup>12</sup> is



13  
 14 wherein R<sup>14</sup>, R<sup>15</sup> and R<sup>18</sup> are each a hydrogen atom or a methyl group,  
 15 and R<sup>17</sup> is a hydrocarbon group having 1 to 10 carbon atoms;



16  
 17 wherein R<sup>19</sup> is a hydrocarbon group having 1 to 10 carbon atoms, and  
 18 R<sup>20</sup> and R<sup>21</sup> are each



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wherein  $\text{R}^{24}$ ,  $\text{R}^{25}$  and  $\text{R}^{26}$  are each a hydrogen atom or a methyl group,  
and  $\text{R}^{27}$  is a hydrocarbon group having 1 to 10 carbon atoms.

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16. An optical article having the optical element according to  
any one of claims 1 to 15.

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17. The optical article according to claim 16, wherein;  
said optical element is a lens; and  
said optical article is a still camera.

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18. The optical article according to claim 16, wherein;  
said optical element is a lens; and  
said optical article is a video camera.

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19. The optical article according to claim 16, wherein;  
said optical element is a lens; and  
said optical article is an interchangeable lens.

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20. A process for producing a resin-cemented optical element,  
the process comprising:

3 a first exposure step of irradiating a photosensitive resin  
 4 composition held between the surface of a base member and a mold  
 5 tool, to cure the composition to form a resin layer;  
 6 a mold release step of mold-releasing the resin layer; and  
 7 a heating step of heating the resin layer,  
 8 in this order.

1 21. A process for producing a resin-cemented optical element,  
 2 the process comprising:  
 3 a first exposure step of irradiating a photosensitive resin  
 4 composition held between the surface of a base member and a mold  
 5 tool, with heating to cure the composition to form a resin layer; and  
 6 a mold mold release step of mold-releasing the resin layer,  
 7 in this order.

1 ~~22. The production process according to claim 21, wherein the~~  
 2 ~~heating in said exposure step is carried out at a temperature of from~~  
 3 ~~40°C to 130°C.~~

1 ~~23. A process for producing a resin-cemented optical element,~~  
 2 ~~the process comprising:~~  
 3 ~~a first exposure step of irradiating a photosensitive resin~~  
 4 ~~composition held between the surface of a base member and a mold~~  
 5 ~~tool, by light with a wavelength of 300 nm or more to cure the~~

6 composition to form a resin layer; and  
7 a mold release step of mold-releasing the resin layer,  
8 in this order.

1 24. A process for producing a resin-cemented optical element,  
2 the process comprising:

3 a first exposure step of irradiating a photosensitive resin  
4 composition held between the surface of a base member and a mold  
5 tool, to cure the composition to form a resin layer;

6 a mold release step of mold-releasing the resin layer; and

7 a second exposure step of irradiating the resin layer by light  
8 with a wavelength of 300 nm or more,  
9 in this order.

1 25. The production process according to any one of claims 20,  
2 21 and 23, which further comprises, after said mold release step, a  
3 second exposure step of irradiating said resin layer by light with a  
4 wavelength of 300 nm or more.

1 26. The production process according to any one of claims 23  
2 to 25, wherein at least one irradiation by light with a wavelength of  
3 300 nm or more is performed shutting out light with a wavelength of  
4 less than 300 nm among light emitted from a light source.



1           27. The production process according to claim 21 or 23, which  
2 further comprises, after said mold release step, a heating step of  
3 heating said resin layer.

1           28. The production process according to claim 21 or 23, which  
2 further comprises, after said second exposure step, a heating step of  
3 heating said resin layer.

1           29. The production process according to any one of claims 20,  
2 27 and 28, wherein the heating in said heating step is carried out at a  
3 temperature of from 40°C to 130°C.

1           30. The production process according to any one of claims 20,  
2 21, 23 and 24, wherein said resin composition comprises:

- 3           (A) a polyfunctional (meth)acrylate;  
4           (B) a polyfunctional urethane-modified (meth)acrylate; and  
5           (C) a photopolymerization initiator.

A13  
noted

A10  
noted